

REMARKS

Claims 34-38, 40, 41, 43-46, and 48 are pending. Claims 34, 37, 40, and 46 have been amended. Claim 37 has been written in independent form and is deemed allowable. Claims 42 and 47 have been cancelled. New claim 49 has been added.

Applicant notes that the Office Action fails to address claim 47 and respectfully requests that, unless claim 46 (which has been amended to incorporate the subject matter of claim 47) is deemed allowable, a second non-final action be issued so that Applicant can address any rejections of the subject matter of claim 47 by the Examiner.

Rejections under 35 U.S.C. § 102

As the PTO provides in MPEP § 2131, "[t]o anticipate a claim, the reference must teach every element of the claim...." (emphasis added). Therefore, each reference applied under 35 U.S.C. § 102 must disclose all of the elements of the claims to sustain the rejection. Accordingly, Applicant respectfully traverses these rejections on the following grounds.

Claims 40, 42, 43

Claims 40, 42, and 43 stand rejected under 35 U.S.C. § 102 in light of U.S. Patent No. 5,357,136 to Yoshioka ("Yoshioka").

Claim 40, as amended, recites in part a bond pad structure for a semiconductor device comprising a metal barrier layer covering a passivation layer and exposed portions of a metal wiring layer, wherein the metal barrier layer conforms to a shape provided by the island structures and does not completely fill the spaces between the island structures, and a metal pad layer covering the metal barrier layer, wherein the metal pad layer fills the spaces between the island structures not filled by the metal barrier layer and rises above the island structures.

Applicant submits that Yoshioka fails to teach or suggest every element of claim 40. For example, Yoshioka fails to disclose a metal pad layer that fills the spaces between the island structures not filled by the metal barrier layer and rises above the island structures. Accordingly, Yoshioka fails to teach or suggest every element of claim 40 as required by MPEP § 2131, and

claim 40 is allowable over the cited reference. Claims 41-45 depend from and further limit claim 40 and are allowable for at least the same reason as claim 40.

Claims 46 and 48

Claims 46 and 48 stand rejected under 35 U.S.C. § 102 in light of U.S. Patent No. 5,357,136 to Yoshioka ("Yoshioka").

Claim 46, as amended to incorporate claim 47, recites in part a second metal layer covering the vertical structures and the exposed portions of the first metal layer, wherein the second metal layer substantially conforms to a non-planer shape provided by the vertical structures, and a third metal layer covering the second metal layer, wherein the third metal layer surrounds and rises above each of the vertical structures.

Applicant submits that Yoshioka fails to teach or suggest at least the above element of claim 46 as required by MPEP § 2131, and claim 46 is allowable over the cited reference. Claim 48 depends from and further limits claim 46 and is allowable for at least the same reason as claim 46.

Claims 40-44

Claims 40-44 stand rejected under 35 U.S.C. § 102 in light of U.S. Patent No. 5,900,668 to Wollesen ("Wollesen"). As the PTO provides in MPEP § 2131, "[t]o anticipate a claim, the reference must teach every element of the claim...." (emphasis added). Therefore, each reference applied under 35 U.S.C. § 102 must disclose all of the elements of the claims to sustain the rejection. Accordingly, Applicant respectfully traverses this rejection on the following grounds.

Claim 40, as amended, recites in part a bond pad structure for a semiconductor device comprising a metal barrier layer covering a passivation layer and exposed portions of a metal wiring layer, wherein the metal barrier layer conforms to a shape provided by the island structures and does not completely fill the spaces between the island structures, and a metal pad layer covering the metal barrier layer, wherein the metal pad layer fills the spaces between the island structures not filled by the metal barrier layer and rises above the island structures.

Applicant submits that Wollesen fails to teach or suggest every element of claim 40. For example, Wollesen fails to disclose a metal pad layer that fills the spaces between the island structures not filled by the metal barrier layer and rises above the island structures. Applicant has carefully reviewed Fig. 5 and the associated text of Wollesen, and fails to find any teaching or suggestion of the above recited element of claim 40. Accordingly, Applicant submits that Wollesen fails to teach or suggest every element of claim 40 as required by MPEP § 2131, and claim 40 is allowable over the cited reference. Claims 41 and 43-45 depend from and further limit claim 40 and are allowable for at least the same reason as claim 40.

Rejections under 35 U.S.C. § 103

Claims 34, 35, and 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wollesen in view of US 2002/0005582 to Nogami et al. ("Nogami"). Under MPEP § 2142, "[i]f the examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness." It is submitted that the Office action fails to factually support a prima facie case of obviousness based on the cited references for the following reasons.

Claim 34, as amended, recites in part a passivating layer forming multiple free-standing vertical islands to provide interlocking grid structures over a semiconductor substrate, wherein the vertical islands are separated by openings in the passivating layer, and a conducting pad formed within said openings and over said interlocking grid structures and over a barrier layer.

Applicant submits that Wollesen fails to teach or suggest every element of claim 34. For example, Wollesen fails to disclose a conducting pad formed within openings in a passivating layer and over interlocking grid structures as recited above. Applicant has carefully reviewed Fig. 5 and the associated text of Wollesen, and fails to find any teaching or suggestion of the above recited elements of claim 34. Nogami fails to supply the deficiencies of Wollesen. Accordingly, Applicant submits that the combination of Wollesen and Nogami fails to teach or suggest every element of claim 34 as required by MPEP § 2143, and claim 34 is allowable over the cited references. Claims 35, 36, and 38 depend from and further limit claim 34 and are allowable for at least the same reason as claim 34.

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Claim 45 depends from and further limits claim 40 and is allowable for at least the same reason as claim 40.

Conclusion

It is respectfully submitted that all the claims in the application are in condition for allowance. Should the Examiner deem that any further amendment is needed to place this application in condition for allowance, the Examiner is invited to telephone the undersigned at the below listed telephone number.

Respectfully submitted,

T. F. Bliss

Timothy F. Bliss
Registration No. 50,925

Dated: 12/17/04
HAYNES AND BOONE, LLP
901 Main Street, Suite 3100
Dallas, Texas 75202-3789
Telephone: 972 739-8638
Facsimile: 214 200-0853
File: 1999-0149 / 24061.302
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Bonnie Boyle